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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/541,878	07/08/2005	Tadashi Iwamatsu	63793(70801)	7946

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EXAMINER	
TRAN, THUY V	
ART UNIT	PAPER NUMBER
2821	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/23/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/541,878	IWAMATSU ET AL.	
	Examiner	Art Unit	
	Thuy V. Tran	2821	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *03* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 July 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-9* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-9* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *08 July 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *07/08/05; 12/4/06*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

This Office Action is responsive to the Applicants' communication filed on 07/08/2005 and preliminary amendment concurrently filed therewith. In virtue of this amendment, claims 1-9 are currently presented in the instant application.

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Inventorship

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Information Disclosure Statement

3. The information disclosure statement (IDS) submitted on 07/08/2005 is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Drawings

4. The drawings submitted on 07/08/2005 are accepted.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> *A person shall be entitled to a patent unless –*
> *(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.*

6. Claims 1-9 are rejected under 35 U.S.C. 102(e) as being anticipated by Komoda et al. (U.S. Patent No. 6,249,080 B1); hereinafter "Komoda".

With respect to claim 1, Komoda discloses, in Fig. 3, an electron emission device comprising (1) an electron emitter that includes a lower electrode [2], an upper electrode [7] made of a thin film [7] (see col. 6, lines 52-53), and a semiconductor layer [1, 5, 6] formed between the lower electrode [2] and the upper electrode [7], a surface of the upper electrode [7] exposed to an external space (between [7] and [21] as shown in Fig. 3); (2) a counter electrode [21] that is provided opposite the upper electrode [7] across the external space; (3) a fine particle charging voltage control section [Vps] that applies an electron emitting voltage for accelerating electrons in the semiconductor layer [1, 5, 6] , passing the electrons through the upper electrode [7], and emitting the electrons to the external space, or a voltage for charging fine particles attached to the surface of the upper electrode between the upper electrode [7] and the lower electrode [2]; and (4) a flying voltage control section [Vc] that applies, between the upper electrode [7] and the counter electrode [21], a voltage for allowing the charged fine particles to fly from the surface of the upper electrode [7] to the counter electrode [21], whereby inherently providing the electron emission device with a cleaning function (since it is used with a solid vacuum device; see col. 2, line 48).

With respect to claim 2, Komoda discloses that the semiconductor layer [1, 5, 6] is a porous silicon semiconductor layer in which a part [6] or all of polysilicon is made porous (see col. 6, lines 50-51).

With respect to claim 3, Komoda discloses that the counter electrode [21] has an insulating layer [33] (which is of glass; see Fig. 17; col. 14, line 9) formed on its surface.

With respect to claim 4, Komoda discloses that the flying voltage control section [Vc] applies a pulsed voltage so that the counter electrode [21] has a positive potential relative to the upper electrode [7] (see col. 8, lines 8-10).

With respect to claim 5, the limitation "wherein the flying voltage control section operates a control to apply the voltage having a first voltage value to the external space between the upper electrode and the counter electrode, and after the fine particle charging voltage control section applies a predetermined voltage between the upper electrode and the lower electrode to charge the fine particles attached to the surface of the upper electrode, the flying voltage control section operates a control to apply the voltage having a second voltage value higher than the first voltage value, the second voltage value having such a magnitude that allows the charged fine particles to fly from the upper electrode to the counter electrode and that atmospheric discharge does not occur, and the fine particle charging voltage control section operates to control to either apply a voltage having an opposite polarity to a polarity of the electron emitting voltage or apply no voltage between the upper electrode and the lower electrode, thereby allowing the charged fine particles to fly from the surface of the upper electrode to the counter electrode" recited in lines 1-17 is not of patentable merits since it is directed to a manner of operating the electron emission device which does not differentiate apparatus claim from the prior art. A claim

containing a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus if the prior art apparatus teaches all the structural limitations of the claim. See MPEP § 2114.

With respect to claim 6, the limitation "wherein the flying voltage control section is constructed to be capable of setting a polarity of a voltage applied between the upper electrode and the lower electrode to either positive or negative, the flying voltage control section operates a control to apply a voltage having a second voltage value having such a magnitude that allows the charged fine particles to fly from the upper electrode to the counter electrode and that atmospheric discharge does not occur, and the fine particle charging voltage control section operates to control to either apply a voltage having an opposite polarity to a polarity of the electron emitting voltage or apply no voltage between the upper electrode and the lower electrode, thereby allowing the charged fine particles to fly from the surface of the upper electrode to the counter electrode" recited in lines 1-13 is not of patentable merits since it is directed to a manner of operating the electro emission device which does not differentiate apparatus claim from the prior art. A claim containing a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus if the prior art apparatus teaches all the structural limitations of the claim. See MPEP § 2114.

With respect to claim 7, Komoda discloses that the flying voltage control section [Vc] applies a voltage between the upper electrode [7] and the counter electrode [21] when the electrons are not emitted from the electron emitter so that the surface of the upper electrode [7]

of the electron emitter is negative (since [Vc] supplies a voltage to the counter electrode [21] at a positive polarity with respect to [7]; see col. 7, lines 9-10).

With respect to claim 8, Komoda discloses that the electron emission device is inherently for use in a laser printer or a digital copying machine (since Komoda teaches that the device is for use in a planar light emitting apparatus or all being of a kind capable of emitting light uniformly; see col. 2, lines 47-49).

With respect to claim 9, Komoda inherently (since Komoda teaches that the device is used with a solid vacuum device; see col. 2, line 48) discloses that the fine particles include dust such as toner and paper particles.

Citation of relevant prior art

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

Prior art Honda et al. (U.S. Patent No. 6,765,342 B1) discloses a field emission device;

Prior art Komoda et al. (U.S. Patent No. 6,720,717 B2) discloses a field emission device;

Prior art Kitamura et al. (U.S. Patent No. 6,624,589 B2) discloses an electron emitting device;

Prior art Watabe et al. (U.S. Patent No. 6,498,426 B1) discloses a field emission electron source; and

Prior art Hatai et al. (U.S. Patent No. 6,285,118 B1) discloses a field emission device.

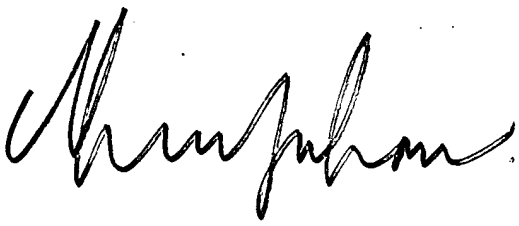
Inquiry

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thuy V. Tran whose telephone number is (571) 272-1828. The examiner can normally be reached on M-F (8:00 AM -4:00 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy P. Callahan can be reached on (571) 272-1740. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

01/17/2007



THUY V. TRAN
PRIMARY EXAMINER